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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/920,682	08/02/2001	Lands J. Stewart JR.		5757

24919 7590 02/25/2005

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EXAMINER	
KYLE, MICHAEL J	

ART UNIT	PAPER NUMBER
3676	

DATE MAILED: 02/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/920,682	STEWART, LANDS J.	
	Examiner	Art Unit	
	Michael J Kyle	3676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 November 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5,6,9-12,14-16,18,19,22-24,26,27,29,30 and 32-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9-11,22,23,32,33,35-39,41 and 43* is/are allowed.

6)☒ Claim(s) *1-3,6,12,14-16,19,24,26,27,29,30,34,40,42 and 44* is/are rejected.

7)☒ Claim(s) *5 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 40 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by McKee (U.S. Patent No. 3,376,084). McKee discloses a seal for use adjacent to a rotating surface (12) comprising a ring (56) having a sealing surface (68) sealing between a portion of the stationary surface (48) and the sealing surface. The ring (56) is spaced from the rotating surface and has a race engagement surface (72) separate from the sealing surface. McKee also discloses a first race (16), a second race (38 or 40), and a plurality of bearing elements (34). The first race has a substantially planar first bearing surface (axial ends of 16), and the second race has a substantially planar second bearing surface (axial ends of 38 or 40). A plurality of bearing elements (34) are disposed between the first and second races. McKee further discloses a bearing cage (36) defining a plurality of opening. The bearings (34) are disposed in these opening. Examiner notes that cushion 56 bears on one axial end of second race 38 or 40, and a tool, such as a burr or drill may bear against an axial end of first race 16. While McKee describes features 56 and 58 as being cushioning elements, examiner notes this structure inherently provides a sealing function. For this reason, examiner considers 56 and 58 to be seals.

3. Claims 26, 27, 29, 30, 34, and 44 are rejected under 35 U.S.C. 102(b) as being anticipated by Bradshaw (U.S. Patent No. 579,857). With respect to claims 26 and 44, Bradshaw discloses a seal for use adjacent a rotating race engagement surface and a stationary race engagement surface comprising a first race (B) defining substantially concentric outer and inner annular portions (see arms of B in figure 2). Bradshaw also discloses a second race (A) disposed between the annular portions of the first race (see figure 2). Bradshaw further shows a plurality of bearing elements (11, 12) between the first and second races. The first and second are adapted for engagement with a rotating race engagement surface and a stationary race engagement surface. The first race has a substantially planar first bearing surface (portion of B contacting 12), and the second race (A) has a substantially planar second bearing surface (portion of A contacting 12). The first and second bearing surfaces are substantially parallel.

4. With respect to claims 27 and 29, Bradshaw discloses a bearing cage (10) defining a plurality of bearing openings (receiving 11) disposed between the first and second races, where the bearing elements (11, 12) are disposed in the openings. The bearing elements (11, 12) engage the first and second bearing surfaces.

5. With respect to claims 30 and 34, Bradshaw discloses the bearing elements (12) to be rollers.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1-3 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKee in view of Klein et al ("Klein", U.S. Patent No. 5,370,404). McKee discloses a seal for use adjacent to a rotating surface (12) comprising a ring (56) having a sealing surface (68) sealing between a portion of the stationary surface (48) and the sealing surface. The ring (56) is spaced from the rotating surface and has a race engagement surface (72) separate from the sealing surface. McKee also discloses a first race (16), a second race (38 or 40), and a plurality of bearing elements (34). While McKee describes features 56 and 58 as being cushioning elements, examiner notes this structure inherently provides a sealing function. For this reason, examiner considers 56 and 58 to be seals. McKee fails to disclose a metal-to-metal seal.

8. Klein teaches a sealing arrangement (4) between stationary surface and sealing surface. The seal provides a metal-to-metal seal (at 17, against 2). Ring 17 ensures reliable fixation of the seal arrangement within the bore, and creates a friction bond between the ring 17 and wall 2. Examiner considers this friction bond to be a seal. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify McKee as taught by Klein, such that McKee's seal 56 includes metal reinforcement ring (17 of Klein) to ensure reliable fixation of the seal arrangement within the bore (Klein, column 4, lines 39-43).

9. With respect to claims 2 and 3, McKee discloses a bearing cage (36) disposed between first and second races, defining bearing openings. The bearing elements (34) are disposed in the openings. McKee also discloses the sealing surface (68) to be an outer peripheral surface of the ring.

10. With respect to claim 14, McKee discloses a stationary housing (48) having a sealing surface, a rotor assembly (12), a ring (56) having a sealing surface (68) sealing along a portion of the housing sealing surface and spaced from the rotor, having a bearing race engagement surface (72) separate from the ring sealing surface. McKee also discloses a first bearing race (16) engaging a portion of the rotor (12), a second bearing race (38 or 40) engaging the race engagement surface, and a bearing cage (36) defining a plurality of bearing openings disposed between the first and second bearing races. A plurality of bearing elements (34) are disposed in the bearing openings. McKee fails to disclose a metal-to-metal seal.

11. Klein teaches a sealing arrangement (4) between stationary surface and sealing surface. The seal provides a metal-to-metal seal (at 17, against 2). Ring 17 ensures reliable fixation of the seal arrangement within the bore, and creates a friction bond between the ring 17 and wall 2. Examiner considers this friction bond to be a seal. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify McKee as taught by Klein, such that McKee's seal 56 includes metal reinforcement ring (17 of Klein) to ensure reliable fixation of the seal arrangement within the bore (Klein, column 4, lines 39-43).

12. With respect to claims 15 and 16, the housing sealing surface is substantially cylindrical and the ring sealing surface (68) is substantially concentric with the housing sealing surface. McKee also discloses the ring sealing surface (68) to be an outer peripheral surface of the ring.

13. Claims 12 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKee in view Klein, as applied to claims 1 and 14 above, and in further view of Ide (U.S. Patent No. 5,425,584). McKee and Klein disclose the bearings to be balls, not rollers, as claimed.

14. Ide teaches a bearing assembly that uses conventional rolling element bearing components and rolling elements, such as balls or rollers (column 9, lines 24-29), thereby establishing ball bearing and roller bearing as an art recognized equivalent, as either can be used and still allow for proper functioning of the machine they are used in. It would have been obvious to one having ordinary skill in the art at the time of the invention to use either ball or roller bearings in McKee, as taught by Ide, as they are equivalent in the art.

15. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKee in view Ide (U.S. Patent No. 5,425,584). McKee discloses the bearings to be balls, not rollers, as claimed.

16. Ide teaches a bearing assembly that uses conventional rolling element bearing components and rolling elements, such as balls or rollers (column 9, lines 24-29), thereby establishing ball bearing and roller bearing as an art recognized equivalent, as either can be used and still allow for proper functioning of the machine they are used in. It would have been obvious to one having ordinary skill in the art at the time of the invention to use either ball or roller bearings in McKee, as taught by Ide, as they are equivalent in the art.

Allowable Subject Matter

17. Claims 5 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. Claims 9-11, 22, 23, 32, 33, 35-39, 41, and 43 are allowed.

19. The indicated allowability of claim 28, which has been re-written in independent form in claim 44, to include the limitations of claim 26, is withdrawn in view of the newly discovered reference(s) to Bradshaw. Rejections based on the newly cited reference(s) above.

20. The indicated allowability of claims 4 and 17, presently re-written in independent claims 40 and 42, to include limitations of claims 1 and 14, respectively, is withdrawn in view of a broader interpretation of the claims. Rejections are recited above. Specifically, these claims recite a first race having a substantially planar bearing surface thereon, and a second race having a substantially planar second bearing surface thereon. They continue to recite a plurality of bearing elements disposed between the first and second races. The claims do not recite a relationship between the location of the bearing elements and first and second planar bearing surfaces.

Response to Arguments

21. Applicant's arguments with respect to claims 1 and 14 have been considered but are moot in view of the new ground(s) of rejection.

22. These claims are now rejected by the combination of McKee and Klein. Klein teaches a metal-to-metal sealing area. Implementing this metal surface into McKee will provide reinforcement to McKee's cushioning element, but will no eliminate the cushioning effect, as there will only be a metal surface, not an entirely metal seal.

23. Applicant's arguments with respect to claim 26 have been considered but are moot in view of the new ground(s) of rejection. Claim 26 is now rejected by Bradshaw as described above.

24. With respect to claims 12, 24, and 34, applicant argues that the roller bearing taught by Ide would not be interchangeable with the bearing in McKee's patent. Examiner respectfully disagrees. Ide expressly teaches that either balls or rollers may be used to achieve an identical bearing effect. Thus, these two types of bearings are equivalent in the art. The axial forces argued by applicant are discussed by McKee in column 3, lines 11-21, where McKee states that the axial forces are absorbed by lips 64. From this, it is seen that minimal axial forces are transmitted to the bearing are minimal. Additionally, applicant's assertion that axial loading on shaft 16 would drive it into end cap 52 appears to be speculation. If this were the case, it appears that the ball bearings in McKee would suffer from the same argued deficiency as the roller bearings.

Conclusion

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Kyle whose telephone number is 703-305-3614. The examiner can normally be reached on Monday - Friday, 8:30 am - 5:00 pm.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Swann can be reached on 703-306-4115. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mk

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